IN THE CLAIMS:

1. (Canceled)

2. (Previously presented) A method of balancing path usage over a plurality of paths from a first device to a second device, comprising:

identifying a highest path from the plurality of paths, the highest path having a highest total path usage;

identifying a lowest path from the plurality of paths, the lowest path having a lowest total path usage;

calculating a difference between the total path usage of the highest path and the lowest path to form a calculated difference; and

performing path balancing if a difference in a total path usage of a path having a highest path usage and a total path usage of a path having a lowest path usage is greater than a threshold usage amount.

3. (Currently amended) The method of claim 2, wherein the second device is a plurality of second devices, and wherein each of the plurality of second devices is associated with at least one of the plurality of paths and wherein the path balancing includes moving ~~a second device~~ one of the plurality of second devices from the highest path to the lowest path based on the calculated difference.

4. (Canceled)

5. (Original) The method of claim 3, wherein the second device that is moved is the second device from the plurality of second devices that has a usage amount closest to a target amount.

6. (Original) The method of claim 5, wherein the target amount is a fraction of the difference of the total path usage of the highest path and the lowest path.

7. (Currently amended) The method of claim 2, wherein the total usage for each path is determined as a function of the total usage for each second device associated with each path.

8. (Original) The method of claim 7, wherein the total usage for each second device is a function of a total number of input/output messages directed to each second device multiplied by the expected connect time for the input/output messages.

9. (Original) The method of claim 8, wherein the expected connect time for the input/output messages is based on the type of input/output message being sent.

10. (Previously presented) The method of claim 2, wherein determining a total path usage for each of the plurality of paths includes sampling a number of I/O messages issued over each of the paths during a sampling period.

11. (Original) The method of claim 3, wherein moving the second device from the highest path to the lowest path based on the calculated difference includes changing address information for the second device.

12-13. (Canceled)

14. (Previously presented) A method of balancing communication path usage over a plurality of communication paths from an open system device to a peripheral device, comprising:

calculating a total path usage for each of the plurality of communication paths;

identifying a highest communication path from the plurality of communication paths, the highest communication path having a highest total path usage;

identifying a lowest communication path from the plurality of communication paths, the lowest communication path having a lowest total path usage;

calculating a difference between the total path usage of the highest communication path and the lowest communication path to form a calculated difference; and

moving a peripheral device associated with the highest communication path from the highest communication path to the lowest communication path based on the calculated difference.

15. (Canceled)

16. (Original) The method of claim 14, wherein the peripheral device that is moved is the peripheral device from the plurality of peripheral devices that has a usage amount closest to a target amount.

17. (Original) The method of claim 16, wherein the target amount is a fraction of the difference of the total path usage of the highest communication path and the lowest communication path.

18. (Currently amended) The method of claim 14, wherein the total usage for each communication path is determined as a function of the total usage for each peripheral device associated with each communication path, respectively.

19. (Original) The method of claim 18, wherein the total usage for each peripheral device is a function of a total number of input/output messages directed to each peripheral device, respectively, multiplied by the expected connect time for the input/output messages.

20. (Original) The method of claim 19, wherein the expected connect time for the input/output messages is based on the type of input/output message being sent.

21. (Original) The method of claim 14, wherein calculating a total path usage for each of the plurality of communication paths includes sampling a number of input/output messages issued over the plurality of communication paths during a sampling period.

22. (Original) The method of claim 14, wherein moving the peripheral device from the highest path to the lowest path based on the calculated difference includes changing address information for the peripheral device.

23-25. (Canceled)

26. (Previously presented) A computer program product in a computer readable medium for balancing path usage over a plurality of paths from a first device to a second device, comprising:

instructions for performing path balancing if a difference in a total path usage of a path having a highest path usage and a total path usage of a path having a lowest path usage is more than a threshold usage amount;

wherein the instructions further include:

instructions for identifying the highest path from the plurality of paths, the highest path having a highest total path usage;

instructions for identifying the lowest path from the plurality of paths, the lowest path having a lowest total path usage; and

instructions for calculating a difference between the total path usage of the highest path and the lowest path.

27. (Currently amended) The computer program product of claim 26, wherein the second device is a plurality of second devices, and wherein each of the plurality of second devices is associated with at least one of the plurality of paths and wherein the second instructions include instructions for moving ~~a second device~~ one of the plurality of second devices from the highest path to the lowest path based on the difference.

28. (Previously presented) The computer program product of claim 26, wherein the first instructions include instructions for sampling a number of I/O messages issued over each of the plurality of paths during a sampling period.

29. (Original) The computer program product of claim 27, wherein the instructions for moving the second device from the highest path to the lowest path based on the calculated difference includes instructions for changing address information for the second device.

30. (Canceled)

31. (Previously presented) A path balancing apparatus that balances the path usage over a plurality of paths from a first device to a second device, comprising:

a controller that accumulates a total path usage for each of the plurality of paths; and

a path balancing device that performs path balancing by identifying a highest path from the plurality of paths, the highest path having a highest total path usage; identifying a lowest path from the plurality of paths, the lowest path having a lowest total path usage; calculating a difference between the total path usage of the highest path and the lowest path; and performing path balancing if a difference in a total path usage of a path having a highest path usage and a total path usage of a path having a lowest path usage is greater than a threshold usage amount.

32. (Original) The apparatus of claim 31, wherein each of the plurality of second devices is associated with at least one of the plurality of paths and wherein the path balancing device moves a second device from the highest path to the lowest path based on the difference.

33. (Canceled)

34. (Original) The apparatus of claim 32, wherein the second device that is moved by the path balancing device is the second device from the plurality of second devices that has a usage amount closest to a target amount.

35. (Original) The apparatus of claim 34, wherein the target amount is a fraction of the difference between the total path usage of the highest path and the lowest path.

36. (Currently amended) The apparatus of claim 31, wherein the total usage for each path is determined as a function of the total usage for each of the plurality of second devices associated with each path.

37. (Original) The apparatus of claim 36, wherein the total usage for each second device is a function of a total number of input/output messages directed to each second device multiplied by an expected connect time for the input/output messages.

38. (Original) The apparatus of claim 37, wherein the expected connect time for the input/output messages is based on the type of input/output message being sent.

39. (Previously presented) The apparatus of claim 31, wherein the controller accumulates a total path usage for each of the plurality of paths by sampling a number of input/output messages issued over each of the paths during a sampling period.

40. (Original) The apparatus of claim 32, wherein the path balancing device moves the second device from the highest path to the lowest path based on the calculated difference by changing address information for the second device.

41-43. (Canceled)

44. (Previously presented) A path balancing system in which path usage over a plurality of paths from a first device to a second device is balanced, comprising:

means for performing path balancing if a difference between a total path usage of a path having a highest path usage and a total path usage of a path having a lowest path usage is more than a threshold usage amount;

wherein the means performs path balancing by:

identifying a highest path from the plurality of paths, the highest path having a highest total path usage;

identifying a lowest path from the plurality of paths, the lowest path having a lowest total path usage; and

calculating a difference between the total path usage of the highest path and the lowest path.

45. (Currently amended) The system of claim 44, wherein the second device is a plurality of second devices, and wherein each of the plurality of second devices is associated with at least one of the plurality of paths and wherein the second means moves ~~a second device~~ one of the plurality of second devices from the highest path to the lowest path based on the difference.

46. (Canceled)

47. (Original) The system of claim 45, wherein the second device that is moved by the second means is the second device from the plurality of second devices that has a usage amount closest to a target amount.

48. (Original) The system of claim 47, wherein the target amount is a fraction of the difference of the total path usage of the highest path and the lowest path.

49. (Previously presented) The system of claim 44, wherein the total usage for each path is a function of the total usage for each second device associated with each path.

50. (Original) The system of claim 49, wherein the total usage for each second device is a function of a total number of input/output messages directed to each second device multiplied by the expected connect time for the input/output messages.

51. (Original) The system of claim 50, wherein the expected connect time for the input/output messages is based on the type of input/output message being sent.

52. (Previously presented) The system of claim 44, wherein the first means accumulates a total path usage for each of the plurality of paths by sampling a number of input/output messages issued over each of the paths during a sampling period.

53. (Original) The system of claim 45, wherein the second means moves the second device from the highest path to the lowest path based on the calculated difference by changing address information for the second device.

54-55. (Canceled)